US Army Corps
of Engineers

NEWS RELEASE

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Protecting and Restoring America's Wetlands:

Agency Actions to Improve Mitigation and Further the Goal of "No Net Loss" of Wetlands

The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency, in conjunction with the Departments of Agriculture, Commerce, Interior, and Transportation today strengthened their commitment to achieve the goal of no net loss of our Nation's wetlands with the release of a comprehensive action plan and improved guidance to ensure effective, scientifically-based restoration of wetlands impacted by development activities. The Corps' regulatory guidance and the multi-agency action plan will help advance technical capabilities for wetlands restoration and protection, as well as clarify policies to ensure ecologically sound, predictable, and enforceable wetlands restoration completed as part of Clean Water Act and related programs. Both actions are the result of extensive multi-agency collaboration.

"These actions affirm this Administration's commitment to the goal of no net loss of America's wetlands and its support for protecting our Nation's watersheds," EPA Administrator Christine Todd Whitman said. Acting Assistant Secretary of the Army for Civil Works Les Brownlee stated that "the improvements in the Corps' regulatory guidance and implementation of the action plan will enhance effective regulatory decision-making in the permit process and improve the planning of successful wetland mitigation projects."

The National Wetlands Mitigation Action Plan lists 17 action items that the agencies will undertake to improve the effectiveness of restoring wetlands that are impacted or lost to activities governed by clean water laws. Completing the actions in the plan will enable the agencies and the public to make better decisions regarding where and how to restore, enhance, and protect wetlands; improve their ability to measure and evaluate the success of mitigation efforts; and expand the public's access to information on these wetland restoration activities.

A revised Regulatory Guidance Letter leads the list of action items in the National Wetlands Mitigation Plan. Crafted with input from the Federal agencies that play a role in wetlands protection, the Corps' Regulatory Guidance Letter will improve wetlands restoration implemented under the Clean Water Act in support of the Administration's "no net loss of wetlands" goal. In order to advance the goal of no net loss of wetlands, the guidance letter emphasizes the following:

- A watershed-wide approach to prospective mitigation efforts for proposed projects impacting wetlands and other waters
- The increased use of functional assessment tools; and
- Improved performance standards

In addition, the guidance letter emphasizes monitoring, long-term management, and financial assurances to help ensure that restored wetlands actually result in planned environmental gains. The guidance letter also provides greater consistency across the Corps 38 district offices on issues such as the timing of mitigation activities and the party responsible for mitigation success.

Recent independent evaluations published in 2001 by the National Academy of Sciences (NAS) and the General Accounting Office (GAO) reviewed the effectiveness of wetlands compensatory mitigation for authorized losses of wetlands and other waters under Section 404 of the CWA. In its study, the NAS concluded that, despite progress in the last 20 years, the goal of no net loss of wetlands is currently not being met for wetland functions by the compensatory mitigation programs of Federal agencies. The action plan and guidance released today were developed in response to, and are consistent with, the recommendations made in those reports.

"Wetlands" is a collective term for marshes, swamps, bogs, and similar areas that filter and cleanse drinking water supplies, retain flood waters, harbor extensive fish and shellfish populations, and support a diverse array of wildlife. In performing these functions, wetlands provide invaluable ecosystem services. Consequently, their destruction increases flooding and runoff, harms neighboring property, causes stream and river pollution, and results in the loss of valuable habitat.

The agencies are committed to achieving the goal of no net loss of wetlands under the regulatory program and are hopeful of attaining in the near future an increase in the overall function and value of the Nation's wetlands. This is especially important in light of the fact that, since the late 1700s, over half the nation's wetlands have been lost to development and other activities. These losses are widespread - almost half of all states have lost more than 50% of their historic wetland resources.

The CWA prohibits the discharge of dredged or fill material into regulated wetlands and other waters of the United States unless a permit is issued under Section 404 of the CWA authorizing such a discharge. The Corps makes decisions regarding Section 404 permit requests after it completes a careful environmental review of the impacts of proposed discharges, including the potential adverse effects on wetlands. This permit program is designed to avoid impacts to wetlands where possible and minimize these impacts when they are unavoidable. However, if a permit is issued for a project that will result in a loss of wetlands, compensatory mitigation is necessary to replace those lost wetlands. EPA leads the development of the environmental criteria used to evaluate proposed discharges under the CWA.

In addition to the Corps of Engineers and EPA, the Department of Commerce's National Oceanic and Atmospheric Administration, the Department of Interior and the Department of Transportation implement programs involving the restoration of wetlands and other aquatic resources. In combination with the Department of Agriculture's Wetlands Reserve and Conservation Reserve Programs, these restoration efforts are expected to take the country from annual net wetlands loss to net wetlands gain.

Copies of the National Wetlands Mitigation Action Plan and the Regulatory Guidance Letter, as well as links to the above independent studies, will be available on the Corps and EPA websites on Friday, Dec. 27, at:

www.usace.army.mil or www.epa.gov/owow/wetlands/. For further information, contact: David Hewitt, US Army Corps of Engineers, (202) 761-0289.

Questions and Responses

Protecting and Restoring America's Wetlands: Agency Actions to Improve Mitigation and "No Net Loss" Policies

Release dated Dec. 26, 2002

Q and A's

National Wetlands Mitigation Action Plan

Q: What is the National Wetlands Mitigation Action Plan?

A: The Plan is a comprehensive set of actions that the U.S. Environmental Protection Agency and the U.S. Army Corp of Engineers, in conjunction with the Departments of Agriculture, Commerce, and Interior, will undertake to improve the ecological performance and results of compensatory mitigation for impacts to wetlands under the Clean Water Act and related programs. It will help ensure the effective restoration and protection of our Nation's wetlands, consistent with the goals of our clean water laws.

Q: Why was the Plan developed?

A: The Plan was developed to improve the success of mitigation activities. Independent evaluations published in 2001 by the National Academy of Sciences (NAS) and the General Accounting Office (GAO) reviewed the effectiveness of wetlands compensatory mitigation for authorized losses of wetlands and other waters under Section 404 of the Clean Water Act. In its study, the NAS concluded that despite progress in the last 20 years, the goal of no net loss of wetlands is not currently being met for wetlands functions by the compensatory mitigation program. (Links to both the NAS and GAO reports are available at: www.epa.gov/owow/wetlands/guidance/)

Q: How was the Plan developed?

A: The Plan was developed by an interagency workgroup that was developing improvements to the October 2001 Mitigation Regulatory Guidance Letter (see below). The workgroup was informed by recent independent evaluations of mitigation activities under the wetlands program and the contributions of stakeholders concerned with the mitigation of wetlands and other aquatic resources. The federal agencies hosted a stakeholder forum in October 2001 to seek the input of a diverse group of organizations involved in wetlands mitigation and discuss the most pressing issues raised by the NAS, GAO, and other recent commentaries. (Links to the forum proceedings are available at: www.epa.gov/owow/wetlands/)

Q: How does the Plan address concerns raised by the NAS and GAO?

A: The Plan was crafted in response to, and is consistent with, the recommendations made in those reports and at the stakeholder forum. These recommendations resulted in the development of a variety of technical, programmatic, and policy initiatives for improving the effectiveness of compensatory mitigation. The Plan includes such specific action items as the development of guidance on the use of in-kind vs. out-of-kind mitigation and on-site vs. off-site mitigation, the appropriate use of preservation and vegetated buffers as mitigation, and technical guidance on stream mitigation that will assist resource agencies in making better decisions regarding mitigation in a watershed context. The Plan also includes efforts to collect and analyze information on performance standards to enable measurement of mitigation success at replacing lost aquatic functions. In addition, the Plan includes important efforts to analyze existing mitigation tracking methodologies and develop a national database to improve our ability to track the success of mitigation sites into the future.

Q: Does the Plan establish new regulations?

A: No. The Plan establishes a framework for the development of additional research, technical guidance, and policy to help ensure that mitigation activities are successful.

Q: Where can I obtain a copy of the Plan?

A: The Plan is currently available on EPA and Corps web pages at: www.epa.gov/owow/wetlands/ and www.usace.army.mil/

Q: Are the Federal agencies still charged with tracking wetland losses and gains?

A: Yes. Section 401 of the Emergency Wetlands Resources Act requires the U.S. Fish and Wildlife Service to update its wetlands status and trends information at ten-year intervals. Data in this and previous status and trends reports provide important long-term trend information about specific wetlands gains and losses in the United States. The study includes sampling and analysis of natural and human-induced wetland and deepwater habitat gains and losses in the conterminous United States, but does not include information on wetland quality. Further information is available from the U.S. Fish and Wildlife Service website at: http://wetlands.fws.gov/. In addition, the Natural Resources Conservation Service in the U.S. Department of Agriculture also assesses losses and gains of the nation's wetlands as part of the Natural Resource Inventory. Their reports are issued every five years and include data on wetland loss and gain trends for the nation's non-federal lands. Further information is available from the Natural Resources Conservation Service website at: http://www.nrcs.usda.gov/technical/NRI/.

Q: How do the Federal agencies intend to ensure no overall net loss of the Nation's wetland resources in light of the 2001 decision of the Supreme Court in the case Solid Waste Agency of Northern Cook County vs. U.S. Army Corps of Engineers (SWANCC)?

A: While the decision of the Supreme Court in the SWANCC case did decrease federal jurisdiction over certain wetlands and other waters under the Clean Water Act, the goal of the federal regulatory program continues to be no overall net loss of wetlands. The agencies intend to provide the public with an opportunity to comment on any potential regulatory changes addressing Clean Water Act jurisdiction. In the meantime the agencies will continue to implement their responsibilities under the Act, consistent with the Court's decision.

In addition, the agencies will advance a variety of Federal and non-Federal efforts to protect the Nation's wetlands and other aquatic resources. There are a number of innovative and successful non-regulatory, voluntary efforts to protect and restore America's wetlands. Among these are the conservation provisions of the Farm Bill, such as the Wetlands Reserve Program, as well as programs that assist States and others with technical and financial means to protect specific lands and develop comprehensive wetlands protection programs.

The President's support of wetlands protection was recently reiterated this October in his observation of the 30th anniversary of the Clean Water Act and proclamation of 2002-2003 as the Year of Clean Water, "Recent studies show that we are close to achieving our goal of halting overall wetlands loss, and we are hopeful that in the near future we will begin increasing the overall function and value of our wetlands."

Regulatory Guidance Letter (RGL) 02-2

Q: Why is the Corps reissuing the Mitigation RGL?

A: RGL 01-01 was issued on October 31, 2001, to provide consolidated guidance pertaining to compensatory mitigation. While there was support for a number of elements of the original RGL, concerns also were voiced indicating that the RGL would benefit from clarification. RGL 02-02 responds to those concerns and improves the Corps ability to meet the goal of no overall net loss of wetlands. It includes measures that will improve the quality of wetland mitigation required under Corps permits as well as permittee compliance with mitigation requirements. Completion of RGL 02-2 is the first action item in the new National Wetlands Mitigation Action Plan.

Q: Does this RGL have concurrence from the other Federal agencies?

A: Yes. Although RGL 02-2 was developed primarily for Corps of Engineers field staff, it was developed in coordination with a Federal interagency working group assembled by Army Civil Works, and is being released jointly by the Department of the Army and the Environmental Protection Agency. Preparation of RGL 02-02 was extensively coordinated with other Federal agencies including the Office of Management and Budget, Council on Environmental Quality, Environmental Protection Agency, the U.S. Fish & Wildlife Service, the National Marine Fisheries Service, the Natural Resources Conservation Service, the

Federal Highway Administration and the Tennessee Valley Authority. This coordination has resulted in guidance that is consistent with other Federal statutory, regulatory and policy documents.

Q: Does this RGL replace RGL 01-1?

A: Yes, this RGL rescinds and replaces RGL 01-1.

Q: Where can I obtain a copy of the RGL?

A: The RGL, along with links to the NRC/NAS report, is available on the Corps web page under latest news at http://www.usace.army.mil/inet/functions/cw/cecwo/reg/.

Q: Does the RGL respond to the NRC/NAS Report on mitigation in the Corps Regulatory Program?

A: Yes. RGL 02-2 positively responds to the National Research Council/National Academy of Sciences Report on mitigation in the Army Civil Works Regulatory Program. This guidance will improve the planning and construction of mitigation projects and provide a basis for improved performance monitoring and enforcement. Additionally, the RGL discusses how permit conditions can be used to provide assurances and other requirements necessary for successful mitigation of unavoidable impacts to the aquatic environment, including wetlands. The Corps is committed to improving its mitigation and permit compliance record.

Q: Does the RGL support the goal of no overall net loss of wetlands?

A: Yes. RGL 02-2 strongly supports the no overall net loss goal of mitigation for wetlands. This support is stated throughout the guidance, and the guidance contains helpful information on mitigation planning and monitoring that we believe will make important contributions to this goal. The RGL will also improve the Corps ability to meet the goal of no overall net loss of wetlands by improving the quality of wetland mitigation that is required as conditions on Corps permits, and thus improving the compliance with required mitigation by permittees. Evaluation and continual improvement of the quality of mitigation wetlands will be achieved through information collection and analysis on mitigation site performance standards, thus creating opportunities for further improvement. The RGL focuses on taking a watershed approach, requiring wetland mitigation in the context of the watershed's ecological needs, and ensuring protection of wetlands and other aquatic areas established as mitigation.

Q: Does the RGL affect issued permits?

A: No. Detailed mitigation proposals already submitted and approved as part of Department of the Army permit applications will not be affected by this guidance. However, if an issued permit was approved with only a conceptual mitigation plan, the follow-up plan may be required, on a case-by-case basis, to include the details outlined in the guidance such as success criteria.

Q: Does the RGL change existing guidance?

A: The RGL is consistent with existing guidance, but elaborates on field experience in implementing the regulatory program and other information such as the NRC/NAS report. The guidance will move the program to a more watershed-based approach and substantially improve the success of required mitigation.

Q: Will the RGL result in improved environmental protection?

A: Yes. In response to the growing need for consistency in mitigating impacts to the aquatic environment, the need for more rigor in the permit conditions issued and follow-up enforcement of permit conditions, and the need for a watershed approach to requiring mitigation, the Corps issued RGL 02-2. This RGL will substantially improve mitigation consistency among Districts, and permit compliance by establishing the need for a mitigation plan and success criteria.

Q: Will the RGL increase permit workload and slow down permit decisions?

A: RGL 02-2 assembles existing guidance on compensatory mitigation and provides it in concise fashion, thereby ultimately improving the quality and efficiency of the Corps management of compensatory mitigation in all of its Districts. While there may be individual circumstances where additional questions arise or clarifications are necessary on the mitigation components of proposed projects, we anticipate that the RGL's detail will help ensure that mitigation expectations are clear to applicants up front, that mitigation proposals will include all the necessary pieces of good, enforceable mitigation plans, and that fewer requests for supplementary information will be necessary. Furthermore, improved permit conditions for mitigation will reduce compliance problems and, therefore, workload.

United States Environmental Protection Agency
Office of Water
Washington, D.C. 20460

United States Department of the Army
Office of the Assistant Secretary of the Army (Civil Works)
Washington, D.C. 20310-0103

MEMORANDUM TO THE FIELD 24 DEC 2002

SUBJECT: Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

We are pleased to enclose Regulatory Guidance Letter (RGL) 02-2, regarding compensatory mitigation for aquatic resource impacts under the Clean Water Act Section 404 and the Rivers and Harbors Act Section 10 programs. This RGL supercedes RGL 01-1 issued last year.

The concepts embodied in this guidance are intended to fully support the national policy for "no overall net loss" of wetlands and other waters of the United States, consistent with the Section 404(b)(1) Guidelines. Under these regulations, compensatory mitigation is required to offset aquatic resource losses after all appropriate and practicable steps have been taken to first avoid and then minimize aquatic resource impacts. We are strongly committed to the protection of the overall aquatic environment, and RGL 02-2 reinforces this commitment to ensure that authorized losses of wetlands and other waters are appropriately mitigated. Feel free to call your respective Headquarters regulatory program contacts with any questions.

G. Tracy Mehan
Assistant Administrator for Water
U.S. Environmental Protection Agency

R. L. Brownlee
Acting Assistant Secretary for Civil Works
Department of the Army (Civil Works)

Enclosure

US Army Corps of Engineers®

REGULATORY GUIDANCE LETTER

No. 02-2 **Date:** December 24, 2002

SUBJECT: Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899

1. Purpose and Applicability:

a. Purpose: Under existing law the Corps requires compensatory mitigation to replace aquatic resource functions unavoidably lost or adversely affected by authorized activities. This Regulatory Guidance Letter (RGL) clarifies and supports the national policy for "no overall net loss" of wetlands and reinforces the Corps commitment to protect waters of the United States, including wetlands. Permittees must provide appropriate and practicable mitigation for authorized impacts to aquatic resources in accordance with the laws and regulations. Relevant laws, regulations, and guidance are listed in Appendix A. This guidance does not modify existing mitigation policies, regulations, or guidance. However, it does supercede RGL 01-1 that was issued October 31, 2001. Districts will consider the requirements of other Federal programs when implementing this guidance.

b. Applicability: This guidance applies to all compensatory mitigation proposals associated with permit applications submitted for approval after this date.

2. General Considerations: Districts will use watershed and ecosystem approaches when determining compensatory mitigation requirements, consider the resource needs of the watersheds where impacts will occur, and also consider the resource needs of neighboring watersheds. When evaluating compensatory mitigation plans, Districts should consider the operational guidelines developed by the National Research Council (2001) for creating or restoring ecologically self-sustaining wetlands. These operational guidelines, which are in Appendix B, will be provided to applicants who must implement compensatory mitigation projects.

a. Watershed Approach: A watershed-based approach to aquatic resource protection considers entire systems and their constituent parts. Districts will recognize the authorities of, and rely on the expertise of, tribal, state, local, and other Federal resource management programs. During the permit evaluation process, Districts will coordinate with these entities and take into account zoning regulations, regional council and metropolitan planning organization initiatives, special area management planning initiatives, and other factors of local public interest. Watersheds will be identified, for accounting purposes, using the U.S. Geologic Survey's Hydrologic Unit Codes. Finally, applicants will be encouraged to provide compensatory mitigation projects that

Codes. Finally, applicants will be encouraged to provide compensatory mitigation projects that include a mix of habitats such as open water, wetlands, and adjacent uplands. When viewed from a watershed perspective, such projects often provide a greater variety of functions.

b. Consistency and Compatibility. Districts will coordinate proposed mitigation plans with tribes, states, local governments, and other Federal agencies consistent with existing laws, regulation, and policy guidance to ensure that applicants' mitigation plans are consistent with watershed needs and compatible with adjacent land uses. Districts will evaluate applicants' mitigation proposals giving full consideration to comments and recommendations from tribes, states, local governments, and other Federal agencies. Districts may coordinate on a case-by-case basis during the application evaluation process, or on programmatic basis to promote consistent and timely decision making.

c. Impacts and Compensation: Army regulations require appropriate and practicable compensatory mitigation to replace functional losses to aquatic resources, including wetlands. Districts will determine what level of mitigation is "appropriate" based upon the functions lost or adversely affected as a result of impacts to aquatic resources. When determining "practicability," Districts will consider the availability of suitable locations, constructibility, overall costs, technical requirements, and logistics. There may be instances where permit decisions do not meet the "no overall net loss of wetlands" goal because compensatory mitigation would be impracticable, or would only achieve inconsequential reductions in impacts. Consequently, the "no overall net loss of wetlands goal" may not be achieved for each and every permit action, although all Districts will strive to achieve this goal on a cumulative basis, and the Corps will achieve the goal programmatically.

d. Measuring Impacts and Compensatory Mitigation. The Corps has traditionally used acres as the standard measure for determining impacts and required mitigation for wetlands and other aquatic resources, primarily because useful functional assessment methods were not available. However, Districts are encouraged to increase their reliance on functional assessment methods. Districts will determine, on a case-by-case basis, whether to use a functional assessment or acreage surrogates for determining mitigation and for describing authorized impacts. Districts will use the same approach to determine losses (debits) and gains (credits) in terms of amounts, types, and location(s) for describing both impacts and compensatory mitigation.

1. **Functional Assessment**: The objective is to offset environmental losses resulting from authorized activities. The ecological characteristics of aquatic sites are unique. Therefore, when possible, Districts should use a functional assessment by qualified professionals to determine impacts and compensatory mitigation requirements. Districts should determine functional scores using aquatic site assessment techniques generally accepted by experts in the field or the best professional judgment of Federal, tribal, and state agency representatives, fully considering ecological functions included in the 404 (b)(1) Guidelines. When a District uses a functional assessment method, e.g., a Hydrogeomorphic Assessment or Wetland Rapid Assessment Procedure, the District will make the method available to applicants for planning mitigation.

2. **Functional Replacement**: For wetlands, the objective is to provide, at a minimum, one-to-one functional replacement, i.e., no net loss of functions, with an adequate margin of safety to reflect anticipated success. Focusing on the replacement of the functions provided by a wetland, rather than only calculation of acreage impacted or restored, will in most cases provide a more accurate and effective way to achieve the environmental performance objectives of the no net loss policy. In some cases, replacing the functions provided by one wetland area can be achieved by another, smaller wetland; in other cases, a larger replacement wetland may be needed to replace the functions of the wetland impacted by development. Thus, for example, on an acreage basis, the ratio should be greater than one-to-one where the impacted functions are demonstrably high and the replacement wetlands are of lower function. Conversely, the ratio may be less than one-to-one where the functions associated with the area being impacted are demonstrably low and the replacement wetlands are of higher function.

3. **Functional Changes**: Districts may account for functional changes by recording them as site-specific debits and credits as defined below.

> **a.) Credit:** A unit of measure, e.g., a functional capacity unit in the Hydrogeomorphic Assessment Method, representing the gain of aquatic function at a compensatory mitigation site; the measure of function is typically indexed to the number of acres of resource restored, established, enhanced, or protected as compensatory mitigation.
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> **b.) Debit:** A unit of measure, e.g., a functional capacity unit in the Hydrogeomorphic Assessment Method, representing the loss of aquatic function at a project site; the measure of function is typically indexed to the number of acres impacted by issuance of the permit.

4. **Acreage Surrogate:** In the absence of more definitive information on the functions of a specific wetland site, a minimum one-to-one acreage replacement may be used as a reasonable surrogate for no net loss of functions. For example, information on functions might be lacking for enforcement actions that generate after-the-fact permits or when there is no appropriate method to evaluate functions. When Districts require one-to-one acreage replacement, they will inform applicants of specific amounts and types of required mitigation. Districts will provide rationales for acreage replacement and identify the factors considered when the required mitigation differs from the one-to-one acreage surrogate.

5. **Streams**. Districts should require compensatory mitigation projects for streams to replace stream functions where sufficient functional assessment is feasible. However, where functional assessment is not practical, mitigation projects for streams should generally replace linear feet of stream on a one-to-one basis. Districts will evaluate such surrogate proposals carefully because experience has shown that stream compensation measures are not always practicable, constructible, or ecologically desirable.

e. Wetland Project Types: Although the following definitions were developed to characterize wetland projects, the principles they reflect may also be useful for decisions on other aquatic resource projects.

1. **Establishment (Creation):** The manipulation of the physical, chemical, or biological characteristics present to develop a wetland on an upland or deepwater site, where a wetland did not previously exist. Establishment results in a gain in wetland acres.

2. **Restoration:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purpose of tracking net gains in wetland acres, restoration is divided into:

> **a.) Re-establishment:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Re-establishment results in rebuilding a former wetland and results in a gain in wetland acres.
>
> **b.) Rehabilitation:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres.

3. **Enhancement:** The manipulation of the physical, chemical, or biological characteristics of a wetland (undisturbed or degraded) site to heighten, intensify, or improve specific function(s) or to change the growth stage or composition of the vegetation present. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in a change in wetland function(s) and can lead to a decline in other wetland functions, but does not result in a gain in wetland acres. This term includes activities commonly associated with enhancement, management, manipulation, and directed alteration.

4. **Protection/Maintenance (Preservation):** The removal of a threat to, or preventing the decline of, wetland conditions by an action in or near a wetland. This term includes the purchase of land or easements, repairing water control structures or fences, or structural protection such as repairing a barrier island. This term also includes activities commonly associated with the term preservation. Preservation does not result in a gain of wetland acres and will be used only in exceptional circumstances.

f. Preservation Credit: Districts may give compensatory mitigation credit when existing wetlands, or other aquatic resources are preserved in conjunction with establishment, restoration, and enhancement activities. However, Districts should only consider credit when the preserved resources will augment the functions of newly established, restored, or enhanced aquatic resources. Such augmentation may be reflected in the amount of credit attributed to the entire mitigation project. In exceptional circumstances, the preservation of existing wetlands or other aquatic resources may be authorized as the sole basis for generating credits as mitigation projects. Natural wetlands provide numerous ecological benefits that restored wetlands cannot provide immediately and may provide more practicable long-term ecological benefits. If preservation alone is proposed as mitigation, Districts will consider whether the wetlands or other aquatic resources: 1) perform

important physical, chemical or biological functions, the protection and maintenance of which is important to the region where those aquatic resources are located; and, 2) are under demonstrable threat of loss or substantial degradation from human activities that might not otherwise be avoided. The existence of a demonstrable threat will be based on clear evidence of destructive land use changes that are consistent with local and regional (i.e., watershed) land use trends, and that are not the consequence of actions under the permit applicant's control.

g. On-site and Off-site Mitigation: Districts may require on-site, off-site, or a combination of on-site and off-site mitigation to maintain wetland functional levels within watersheds. Mitigation should be required, when practicable, in areas adjacent or contiguous to the discharge site (on-site compensatory mitigation). On-site mitigation generally compensates for locally important functions, e.g., local flood control functions or unusual wildlife habitat. However, off-site mitigation may be used when there is no practicable opportunity for on-site mitigation, or when off-site mitigation provides more watershed benefit than on-site mitigation, e.g., is of greater ecological importance to the region of impact. Off-site mitigation will be in the same geographic area, i.e., in close proximity to the authorized impacts and, to the extent practicable, in the same watershed. In choosing between on-site or off-site compensatory mitigation, Districts will consider: 1) likelihood for success; 2) ecological sustainability; 3) practicability of long-term monitoring and maintenance or operation and maintenance; and, 4) relative costs of mitigation alternatives.

h. In-kind and Out-of-kind Mitigation: Districts may require in-kind, out-of-kind, or a combination of in-kind and out-of-kind, compensatory mitigation to achieve functional replacement within surrounding watersheds. In-kind compensation for a wetland loss involves replacement of a wetland area by establishing, restoring, enhancing, or protecting and maintaining a wetland area of the same physical and functional type. In-kind replacement generally is required when the impacted resource is locally important. Out-of-kind compensation for a wetland loss involves replacement of a wetland area by establishing, restoring, enhancing, or protecting and maintaining an aquatic resource of different physical and functional type. Out-of-kind mitigation is appropriate when it is practicable and provides more environmental or watershed benefit than in-kind compensation (e.g., of greater ecological importance to the region of impact).

i. Buffers: Districts may require that compensatory mitigation for projects in wetlands or other aquatic resources include the establishment and maintenance of buffers to ensure that the overall mitigation project performs as expected. Buffers are upland or riparian areas that separate wetlands or other aquatic resources from developed areas and agricultural lands. Buffers typically consist of native plant communities (i.e., indigenous species) that reflect the local landscape and ecology. Buffers enhance or provide a variety of aquatic habitat functions including habitat for wildlife and other organisms, runoff filtration, moderation of water temperature changes, and detritus for aquatic food webs. Additional guidance regarding the appropriate use of buffers as a component of compensatory mitigation is forthcoming.

1. **Upland Areas:** Under limited circumstances, Districts may give credit for inclusion of upland areas within a compensatory mitigation project to the degree that the protection and management of such areas is an enhancement of aquatic functions and increases the overall ecological functioning

of the mitigation site, or of other aquatic resources within the watershed (see Federal Mitigation Banking Guidance and Nationwide Permit General Condition 19). Such enhancement may be reflected in the amount of credit attributed to the mitigation project. Districts will evaluate and document the manner and extent to which upland areas augment the functions of wetland or other aquatic resources. The establishment of buffers in upland areas may only be authorized as mitigation if the District determines that this is best for the aquatic environment on a watershed basis. In making this determination, Districts will consider whether the wetlands or other aquatic resources being buffered: 1) perform important physical, chemical, or biological functions, the protection and maintenance of which is important to the region where those aquatic resources are located; and 2) are under demonstrable threat of loss or substantial degradation from human activities that might not otherwise be avoided.

2. **Riparian Areas:** Districts may give credit for inclusion of riparian areas within a compensatory mitigation project to the degree that the protection and management of such areas is an enhancement of aquatic functions and increases the overall ecological functioning of the mitigation site, or of other aquatic resources within the watershed. Such enhancement may be reflected in the amount of credit attributed to the mitigation project. Districts will evaluate and document the manner and extent to which riparian areas augment the functions of streams or other aquatic resources. The establishment of buffers in riparian areas may only be authorized as mitigation if the District determines that this is best for the aquatic environment on a watershed basis. In making this determination, Districts will consider whether the streams or other aquatic resources being buffered: 1) perform important physical, chemical, or biological functions, the protection and maintenance of which is important to the region where those aquatic resources are located; and 2) are under demonstrable threat of loss or substantial degradation from human activities that might not otherwise be avoided.

j. Compensatory Mitigation Alternatives: Permit applicants may propose the use of mitigation banks, in-lieu fee arrangements, or separate activity-specific projects.

k. Public Review and Comment:

1. **Individual Permits**: Proposed compensatory mitigation will be made available for public review and comment, consistent with the form (mitigation bank, in-lieu fee arrangement, or separate activity-specific compensatory mitigation project) of proposed compensation. Although, as a matter of regulation at 33 CFR 325.1 (d)(9), compensatory mitigation plans are not required before the Corps can issue a public notice, Districts should encourage applicants, during pre-application consultation, to provide mitigation plans with applications to facilitate timely and effective review. Public Notices should indicate the form of proposed compensatory mitigation and include information on components of the compensatory mitigation plan. If mitigation plans are available, synopses may be included in Public Notices and the complete plans made available for inspection at District offices. If mitigation plans are available and reproducible, Districts will forward copies to Federal, tribal, and state resource agencies. Districts should not delay issuing Public Notices when mitigation plans are not submitted with otherwise complete applications proposing impacts to aquatic resources.

2. **General Permits**: Requests for nationwide and regional general permit verifications are not subject to public notice and comment. However, general permit compensatory mitigation provisions or requirements are published for public comment at the time general permits are proposed for issuance or reissuance. Additional review of case-specific mitigation plans should be consistent with the conditions of the Nationwide or Regional Permit. Public review and comment should be provided for proposed mitigation banks and in-lieu-fee arrangements consistent with the Banking Guidance and In-lieu-fee Guidance provisions.

l. Permit Special Conditions: Districts will include in individual permits, and general permit verifications that contain a wetland compensatory mitigation requirement, special conditions that identify: 1) the party(s) responsible for meeting any or all components of compensatory mitigation requirements; 2) performance standards for determining compliance; and, 3) other requirements such as financial assurances, real estate assurances, monitoring programs, and the provisions for short and long-term maintenance of the mitigation site. Special conditions may include, by reference, the compensatory mitigation plan, monitoring requirements and a contingency mitigation plan. Permittees are responsible for assuring that activity-specific compensatory mitigation projects are implemented successfully and protected over the long-term. If mitigation banks or in-lieu fee arrangements are used to provide the mitigation, the party(s) identified as responsible for administering those facets of the bank or the in-lieu fee arrangement become liable for implementation and performance.

m. Timing of Mitigation Construction: Construction should be concurrent with authorized impacts to the extent practicable. Advance or concurrent mitigation can reduce temporal losses of aquatic functions and facilitate compliance. In some circumstances it may be acceptable to allow impacts to aquatic resources to occur before accomplishing compensatory mitigation, for example, in cases where construction of the authorized activity would disturb or harm on site compensatory mitigation work or where a simple restoration project is required. Some Federal-aid highway projects have legal and contractual requirements regarding the timing of mitigation that conflict with the policy to accomplish advance or concurrent mitigation. For compensatory mitigation involving in-lieu-fee arrangements or mitigation banks, the guidance applicable to those forms of mitigation should be followed with respect to timing of mitigation site development. After-the-fact mitigation may also be required for permits issued in emergencies or from an enforcement action.

n. Compensatory Mitigation Accomplished After Overall Project Construction: In general, when impacts to aquatic resources are authorized before mitigation is initiated, Districts will require: 1) a Corps-approved mitigation plan; 2) a secured mitigation project site; 3) appropriate financial assurances in place; and, 4) legally protected, adequate water rights where necessary. Initial physical and biological improvements in the mitigation plan generally should be completed no later than the first full growing season following the impacts from authorized activities. If beginning the initial improvements within that time frame is not practicable, then other measures that mitigate for the consequences of temporal losses should be included in the mitigation plan.

o. General Permits: For activities authorized by general permits, Districts may recommend consolidated compensatory mitigation projects such as mitigation banks and in-lieu fee programs where such sources of compensatory mitigation are available. Consolidated mitigation facilitates a watershed approach to mitigating impacts to waters of the United States. For regional general permits associated with Special Area Management Plans or other types of watershed plans, the District may also recommend the use of mitigation banks or in-lieu-fee arrangements, consistent with the guidance for those forms of compensation.

3. Compensatory Mitigation Plans: Districts will strive to discuss compensatory mitigation proposals with applicants during pre-application consultation. If this does not occur, the scope and specificity of proposed compensatory mitigation plans merely represent the applicant's view of what is necessary, a view that may not be acceptable to the Corps or other governmental authorities. At the earliest opportunity, Districts will advise applicants of the mitigation sequencing requirements of the Section 404(b)(1) Guidelines, or what is required for general permits. Compensation is the last step in the sequencing requirements of the Section 404 (b)(1) Guidelines. Thus, for standard permit applications, Districts should not require detailed compensatory mitigation plans until they have established the unavoidable impact. In all circumstances, the level of information provided regarding mitigation should be commensurate with the potential impact to aquatic resources, consistent with the guidance from Regulatory Guidance Letter 93-2 on the appropriate level of analysis for compliance with the Section 404 (b)(1) Guidelines. Districts will identify for applicants the pertinent factors for this determination (e.g., watershed considerations, local or state requirements, uncertainty, out-of-kind compensation, protection and maintenance requirements, etc.). Districts also will identify for applicants the rationale to be used (e.g., best professional judgment, Hydrogeomorphic Assessment Method, Wetland Rapid Assessment Procedure, etc.) for determining allowable impact and required compensatory mitigation. Applicants will be encouraged to submit appropriate compensatory mitigation proposals with individual permit applications or general permit pre-construction notices. The components listed below form the basis for development of compensatory mitigation plans.

a. Baseline Information: As part of the permit decision Districts will include approved, written compensatory mitigation plans describing the location, size, type, functions and amount of impact to aquatic and other resources, as well as the resources in the mitigation project. In addition, they should describe the size, e.g., acreage of wetlands, length and width of streams, elevations of existing ground at the mitigation site, historic and existing hydrology, stream substrate and soil conditions, and timing of the mitigation. Baseline information may include quantitative sampling data on the physical, chemical, and biological characteristics of the aquatic resources at both the proposed mitigation site and the impact site. This documentation will support the compensatory mitigation requirement.

b. Goals and Objectives: Compensatory mitigation plans should discuss environmental goals and objectives, the aquatic resource type(s), e.g., hydrogeomorphic (HGM) regional wetland subclass, Rosgen stream type, Cowardin classification, and functions that will be impacted by the authorized work, and the aquatic resource type(s) and functions proposed at the compensatory

mitigation site(s). For example, for impacts to tidal fringe wetlands the mitigation goal may be to replace lost finfish and shellfish habitat, lost estuarine habitat, or lost water quality functions associated with tidal backwater flooding. The objective statement should describe the amount, i.e., acres, linear feet, or functional changes, of aquatic habitat that the authorized work will impact and the amount of compensatory mitigation needed to offset those impacts, by aquatic resource type.

c. Site Selection: Compensatory mitigation plans should describe the factors considered during the site selection process and plan formulation including, but not limited to:

1. **Watershed Considerations:** Mitigation plans should describe how the site chosen for a mitigation project contributes to the specific aquatic resource needs of the impacted watershed. A compensatory mitigation project generally should be in the same watershed. The further removed geographically that the mitigation is, the greater is the need to demonstrate that the proposed mitigation will reasonably offset authorized impacts.

2. **Practicability:** The mitigation plan should describe site selection in terms of cost, existing technology, and logistics.

3. **Air Traffic:** Compensatory mitigation projects that have the potential to attract waterfowl and other bird species that might pose a threat to aircraft will be sited consistent with the Federal Aviation Administration Advisory Circular on Hazardous Wildlife Attractants on or near Airports (AC No: 150/5200-33, 5/1/97).

d. Mitigation Work Plan: Compensatory mitigation work plans should contain written specifications and work descriptions, including, but not limited to: 1) boundaries of proposed restoration, establishment, enhancement, or preserved areas (e.g., maps and drawings); 2) construction methods, timing and sequence; 3) source of water supply and connections to existing waters and proximity to uplands; 4) native vegetation proposed for planting; 5) allowances for natural regeneration from an existing seed bank or planting; 6) plans for control of exotic invasive vegetation; 7) elevation(s) and slope(s) of the proposed mitigation area to ensure they conform with required elevation and hydrologic requirements, if practicable, for target plant species; 8) erosion control measures; 9) stream or other open water geomorphology and features such as riffles and pools, bends, deflectors, etc.; and 10) a plan outlining site management and maintenance.

e. Performance Standards: Compensatory mitigation plans will contain written performance standards for assessing whether mitigation is achieving planned goals. Performance standards will become part of individual permits as special conditions and be used for performance monitoring. Project performance evaluations will be performed by the Corps, as specified in the permits or special conditions, based upon monitoring reports. Adaptive management activities may be required to adjust to unforeseen or changing circumstances, and responsible parties may be required to adjust mitigation projects or rectify deficiencies. The project performance evaluations will be used to determine whether the environmental benefits or "credit(s)" for the entire project equal or exceed the environmental impact(s) or "debit(s)" of authorized activities. Performance standards for compensatory mitigation sites will be based on quantitative or qualitative

characteristics that can be practicably measured. The performance standards will be indicators that demonstrate that the mitigation is developing or has developed into the desired habitat. Performance standards will vary by geographic region and aquatic habitat type, and may be developed through interagency coordination at the regional level. Performance standards for wetlands can be derived from the criteria in the 1987 Corps of Engineers Wetlands Delineation Manual, such as the duration of soil saturation required to meet the wetland hydrology criterion, or variables and associated functional capacity indices in hydrogeomorphic assessment method regional guidebooks. Performance standards may also be based on reference wetlands.

f. Project Success: Compensatory mitigation plans will identify all parties responsible for compliance with the mitigation plan and their role in the mitigation project. The special conditions for the permit will identify these responsibilities as required above. Restoration projects provide the greatest potential for success in terms of functional compensation; however, each type has utility and may be used for compensatory mitigation.

g. Site Protection: Compensatory mitigation plans should include a written description of the legal means for protecting mitigation area(s), and permits will be conditioned accordingly. The wetlands, uplands, riparian areas, or other aquatic resources in a mitigation project should be permanently protected, in most cases, with appropriate real estate instruments, e.g., conservation easements, deed restrictions, transfer of title to Federal or state resource agencies or non-profit conservation organizations. Generally, conservation easements held by tribal, state or local governments, other Federal agencies, or non-governmental groups, such as land trusts, are preferable to deed restrictions. Homeowners' associations should be used for these purposes only in exceptional circumstances, such as when the association is responsible for community open spaces with restrictive covenants. Districts may require third party monitoring if necessary to ensure permanent protection. In no case will the real estate instrument require a Corps official's signature. Also, Districts will not approve a requirement that results in the Federal government holding deed restrictions on properties, or that contains real estate provisions committing Corps Districts to any interest in the property in question, unless proper statutory authority is identified that authorizes such an arrangement.

h. Contingency Plan: Compensatory mitigation plans should include contingency plans for unanticipated site conditions or changes. For example, contingency plans may identify financial assurance mechanisms that could be used to implement remedial measures to correct unexpected problems. Additionally, contingency plans will allow for modifications to performance standards if mitigation projects are meeting compensatory mitigation goals, but in unanticipated ways. Finally, contingency plans could address the circumstances that might result in no enforcement or remedial action if forces beyond the control of responsible parties adversely impact mitigation sites. In any case, Districts will determine the course of action to be taken in the event of unexpected conditions based on the goals and objectives for the mitigation project, the performance standards, and the provisions of the contingency plan.

i. Monitoring and Long-term Management: Compensatory mitigation plans will identify the party(s) responsible for accomplishing, maintaining, and monitoring the mitigation. Districts

will require monitoring plans with a reporting frequency sufficient for an inspector to determine compliance with performance standards and to identify remedial action. Monitoring will be required for an adequate period of time, normally 5 to 10 years, to ensure the project meets performance standards. Corps permits will require permanent compensatory mitigation unless otherwise noted in the special conditions of the permit. Districts may take enforcement action even after the identified monitoring period, if there has been a violation.

j. Financial Assurances: Compensatory mitigation plans will identify the party responsible for providing and managing any financial assurances and contingency funds set aside for remedial measures to ensure mitigation success. This includes identifying the party that will provide for long-term management and protection of the mitigation project. Financial assurances should be commensurate with the level of impact and the level of compensatory mitigation required. Permit conditions for minimal and low impact projects are generally sufficient for enforcing performance standards and requiring compliance, without the requirement of additional financial assurances. Financial assurances should be sufficient to cover contingency actions such as a default by the responsible party, or a failure to meet performance standards. District Engineers will generally emphasize financial assurances when the authorized impacts occur prior to successful completion of the mitigation, to include the monitoring period. Financial assurances may be in the form of performance bonds, irrevocable trusts, escrow accounts, casualty insurance, letters of credit, legislatively enacted dedicated funds for government operated banks or other approved instruments. Such assurances may be phased-out or reduced, once the project has been demonstrated functionally mature and self-sustaining in accordance with performance standards.

Financial assurances for third party mitigation should be consistent with existing guidance (e.g., Federal Guidance for the Establishment, Use and Operation of Mitigation Banks, and the Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act). The District will determine project success, and the need to use financial assurances to carry out remedial measures, in accordance with the project performance standards.

4. **Duration**. This guidance remains effective unless revised or rescinded.

FOR THE COMMANDER:

for Robert H. Griffin US Army Col.

Encl

ROBERT H. GRIFFIN
Major General, U.S. Army
Director of Civil Works

Appendix A: Authorities

This RGL is issued in accordance with the following statutes, regulations, and policies. It is intended to clarify provisions within these existing authorities and does not establish new requirements.

a. Clean Water Act Section 404 [33 USC 1344].

b. Rivers and Harbors Act of 1899 Section 10 [33 USC 403 et seq.].

c. Environmental Protection Agency, Section 404(b)(1) Guidelines [40 CFR Part 230]. Guidelines for Specification of Disposal Sites for Dredged or Fill Material.

d. Department of the Army, Section 404 Permit Regulations [33 CFR Parts 320-331]. Policies for evaluating permit applications to discharge dredged or fill material.

e. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines [February 6, 1990].

f. Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks [November 28, 1995].

g. Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act [November 7, 2000]

h. Title XII of the Food Security Act of 1985 as amended by the Farm Security and Rural Investment Act of 2002 [16 USC 3801 et seq.].

i. National Environmental Policy Act [42 USC 4321 et seq.], including the Council on Environmental Quality's implementing regulations [40 CFR Parts 1500-1508].

j. Fish and Wildlife Coordination Act [16 USC 661 et seq.].

k. Fish and Wildlife Service Mitigation Policy [46 FR pages 7644-7663, 1981].

l. Magnuson Fishery Conservation and Management Act [16 USC 1801 et seq.].

m. National Marine Fisheries Service Habitat Conservation Policy [48 FR pages 53142-53147, 1983].

n. The Transportation Equity Act for the 21st Century (TEA-21)

o. Federal Aviation Administration Advisory Circular on Hazardous Wildlife Attracts on or near Airports (AC No: 150/5200-33, 5/1/97)

p. Endangered Species Act of 1973, as amended [16 U.S.C. 1531 et seq.]

q. Migratory Bird Treaty Act [16 U.S.C. 703 et seq.]

r. Issuance of Nationwide Permits [67 FR 2020-2095, January 15, 2002]

Appendix B: Operational Guidelines

Taken from ***Operational Guidelines for Creating or Restoring Self-Sustaining Wetlands*, National Research Council 'Compensating for Wetland Losses Under The Clean Water Act,' June 2001** (Chapter 7, pp. 123-128).

1. Consider the hydrogeomorphic and ecological landscape and climate. Whenever possible locate the mitigation site in a setting of comparable landscape position and hydrogeomorphic class. Do not generate atypical "hydrogeomorphic hybrids"; instead, duplicate the features of reference wetlands or enhance connectivity with natural upland landscape elements (Gwin et al. 1999).

Regulatory agency personnel should provide a landscape setting characterization of both the wetland to be developed and, using comparable descriptors, the proposed mitigation site. Consider conducting a cumulative impact analysis at the landscape level based on templates for wetland development (Bedford 1999). Landscapes have natural patterns that maximize the value and function of individual habitats. For example, isolated wetlands function in ways that are quite different from wetlands adjacent to rivers. A forested wetland island, created in an otherwise grassy or agricultural landscape, will support species that are different from those in a forested wetland in a large forest tract. For wildlife and fisheries enhancement, determine if the wetland site is along ecological corridors such as migratory flyways or spawning runs. Constraints also include landscape factors. Shoreline and coastal wetlands adjacent to heavy wave action have historically high erosion rates or highly erodible soils, and often heavy boat wakes. Placement of wetlands in these locations may require shoreline armoring and other protective engineered structures that are contrary to the mitigation goals and at cross-purposes to the desired functions

Even though catastrophic events cannot be prevented, a fundamental factor in mitigation plan design should be how well the site will respond to natural disturbances that are likely to occur. Floods, droughts, muskrats, geese, and storms are expected natural disturbances and should be accommodated in mitigation designs rather than feared. Natural ecosystems generally recover rapidly from natural disturbances to which they are adapted. The design should aim to restore a series of natural processes at the mitigation sites to ensure that resilience will have been achieved.

2. Adopt a dynamic landscape perspective. Consider both current and future watershed hydrology and wetland location. Take into account surrounding land use and future plans for the land. Select sites that are, and will continue to be, resistant to disturbance from the surrounding landscape, such as preserving large buffers and connectivity to other wetlands. Build on existing wetland and upland systems. If possible, locate the mitigation site to take advantage of refuges, buffers, green spaces, and other preserved elements of the landscape. Design a system that utilizes natural processes and energies, such as the potential energy of streams as natural subsidies to the system. Flooding rivers and tides transport great quantities of water, nutrients, and organic matter in relatively short time periods, subsidizing the wetlands open to these flows as well as the adjacent rivers, lakes, and estuaries.

3. *Restore or develop naturally variable hydrological conditions.* Promote naturally variable hydrology, with emphasis on enabling fluctuations in water flow and level, and duration and frequency of change, representative of other comparable wetlands in the same landscape setting. Preferably, natural hydrology should be allowed to become reestablished rather than finessed through active engineering devices to mimic a natural hydroperiod. When restoration is not an option, favor the use of passive devices that have a higher likelihood to sustain the desired hydroperiod over long term. Try to avoid designing a system dependent on water-control structures or other artificial infrastructure that must be maintained in perpetuity in order for wetland hydrology to meet the specified design. In situations where direct (in-kind) replacement is desired, candidate mitigation sites should have the same basic hydrological attributes as the impacted site.

Hydrology should be inspected during flood seasons and heavy rains, and the annual and extreme-event flooding histories of the site should be reviewed as closely as possible. A detailed hydrological study of the site should be undertaken, including a determination of the potential interaction of groundwater with the proposed wetland. Without flooding or saturated soils, for at least part of the growing season, a wetland will not develop. Similarly, a site that is too wet will not support the desired biodiversity. The tidal cycle and stages are important to the hydrology of coastal wetlands.

4. *Whenever possible, choose wetland restoration over creation.* Select sites where wetlands previously existed or where nearby wetlands still exist. Restoration of wetlands has been observed to be more feasible and sustainable than creation of wetlands. In restored sites the proper substrate may be present, seed sources may be on-site or nearby, and the appropriate hydrological conditions may exist or may be more easily restored.

The U.S. Army Corps of Engineers (Corps) and Environmental Protection Agency (EPA) Mitigation Memorandum of Agreement states that, "because the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, restoration should be the first option considered" (Fed. Regist. 60(Nov. 28):58605). The Florida Department of Environmental Regulation (FDER 1991a) recommends an emphasis on restoration first, then enhancement, and, finally, creation as a last resort. Morgan and Roberts (1999) recommend encouraging the use of more restoration and less creation.

5. *Avoid over-engineered structures in the wetland's design.* Design the system for minimal maintenance. Set initial conditions and let the system develop. Natural systems should be planned to accommodate biological systems. The system of plants, animals, microbes, substrate, and water flows should be developed for self-maintenance and self-design. Whenever possible, avoid manipulating wetland processes using approaches that require continual maintenance. Avoid hydraulic control structures and other engineered structures that are vulnerable to chronic failure and require maintenance and replacement. If necessary to design in structures, such as to prevent erosion until the wetland has developed soil stability, do so using natural features, such as large woody debris. Be aware that more specific habitat designs and planting will be required where rare and endangered species are among the specific restoration targets.

Whenever feasible, use natural recruitment sources for more resilient vegetation establishment. Some systems, especially estuarine wetlands, are rapidly colonized, and natural recruitment is often equivalent or superior to plantings (Dawe et al. 2000). Try to take advantage of native seed banks, and use soil and plant material salvage whenever possible. Consider planting mature plants as supplemental rather than required, with the decision depending on early results from natural recruitment and invasive species occurrence. Evaluate on-site and nearby seed banks to ascertain their viability and response to hydrological conditions. When plant introduction is necessary to promote soil stability and prevent invasive species, the vegetation selected must be appropriate to the site rather than forced to fit external pressures for an ancillary purpose (e.g., preferred wildlife food source or habitat).

6. *Pay particular attention to appropriate planting elevation, depth, soil type, and seasonal timing.* When the introduction of species is necessary, select appropriate genotypes. Genetic differences within species can affect wetland restoration outcomes, as found by Seliskar (1995), who planted cordgrass (*Spartina alterniflora*) from Georgia, Delaware, and Massachusetts into a tidal wetland restoration site in Delaware. Different genotypes displayed differences in stem density, stem height, below-ground biomass, rooting depth, decomposition rate, and carbohydrate allocation. Beneath the plantings, there were differences in edaphic chlorophyll and invertebrates.

Many sites are deemed compliant once the vegetation community becomes established. If a site is still being irrigated or recently stopped being irrigated, the vegetation might not survive. In other cases, plants that are dependent on surface-water input might not have developed deep root systems. When the surface-water input is stopped, the plants decline and eventually die, leaving the mitigation site in poor condition after the Corps has certified the project as compliant.

7. *Provide appropriately heterogeneous topography.* The need to promote specific hydroperiods to support specific wetland plants and animals means that appropriate elevations and topographic variations must be present in restoration and creation sites. Slight differences in topography (e.g., micro- and meso-scale variations and presence and absence of drainage connections) can alter the timing, frequency, amplitude, and duration of inundation. In the case of some less-studied, restored wetland types, there is little scientific or technical information on natural microtopography (e.g., what causes strings and flarks in patterned fens or how hummocks in fens control local nutrient dynamics and species assemblages and subsurface hydrology are poorly known). In all cases, but especially those with minimal scientific and technical background, the proposed development wetland or appropriate example(s) of the target wetland type should provide a model template for incorporating microtopography.

Plan for elevations that are appropriate to plant and animal communities that are reflected in adjacent or close-by natural systems. In tidal systems, be aware of local variations in tidal flooding regime (e.g., due to freshwater flow and local controls on circulation) that might affect flooding duration and frequency.

8. *Pay attention to subsurface conditions, including soil and sediment geochemistry and physics, groundwater quantity and quality, and infaunal communities.* Inspect and characterize the

soils in some detail to determine their permeability, texture, and stratigraphy. Highly permeable soils are not likely to support a wetland unless water inflow rates or water tables are high. Characterize the general chemical structure and variability of soils, surface water, groundwater, and tides. Even if the wetland is being created or restored primarily for wildlife enhancement, chemicals in the soil and water may be significant, either for wetland productivity or bioaccumulation of toxic materials. At a minimum, these should included chemical attributes that control critical geochemical or biological processes, such as pH, redox, nutrients (nitrogen and phosphorus species), organic content and suspended matter.

9. *Consider complications associated with creation or restoration in seriously degraded or disturbed sites.* A seriously degraded wetland, surrounded by an extensively developed landscape, may achieve its maximal function only as an impaired system that requires active management to support natural processes and native species (NRC 1992). It should be recognized, however, that the functional performance of some degraded sites may be optimized by mitigation, and these considerations should be included if the goal of the mitigation is water- or sediment-quality improvement, promotion of rare or endangered species, or other objectives best served by locating a wetland in a disturbed landscape position. Disturbance that is intense, unnatural, or rare can promote extensive invasion by exotic species or at least delay the natural rates of redevelopment. Reintroducing natural hydrology with minimal excavation of soils often promotes alternative pathways of wetland development. It is often advantageous to preserve the integrity of native soils and to avoid deep grading of substrates that may destroy natural below-ground processes and facilitate exotic species colonization (Zedler 1996).

10. *Conduct early monitoring as part of adaptive management.* Develop a thorough monitoring plan as part of an adaptive management program that provides early indication of potential problems and direction for correction actions. The monitoring of wetland structure, processes, and function from the onset of wetland restoration or creation can indicate potential problems. Process monitoring (e.g., water-level fluctuations, sediment accretion and erosion, plant flowering, and bird nesting) is particularly important because it will likely identify the source of a problem and how it can be remedied. Monitoring and control of nonindigenous species should be a part of any effective adaptive management program. Assessment of wetland performance must be integrated with adaptive management. Both require understanding the processes that drive the structure and characteristics of a developing wetland. Simply documenting the structure (vegetation, sediments, fauna, and nutrients) will not provide the knowledge and guidance required to make adaptive "corrections" when adverse conditions are discovered. Although wetland development may take years to decades, process-based monitoring might provide more sensitive early indicators of whether a mitigation site is proceeding along an appropriate trajectory.

National Wetlands Mitigation Action Plan

December 24, 2002

The Bush Administration affirms its commitment to the goal of no net loss of the Nation's wetlands. The Administration is hopeful of achieving that goal and in the near future to begin increasing the overall functions and values of our wetlands through the combined efforts of the numerous governmental programs and initiatives, including the Clean Water Act, and non-regulatory wetland conservation initiatives and partnerships among federal agencies, state, tribal and local governments, and the private and not-for-profit sectors. The primary purpose of this Action Plan is to further achievement of the goal of no net loss by undertaking a series of actions to improve the ecological performance and results of wetlands compensatory mitigation under the Clean Water Act and related programs. The actions, listed below and outlined in more detail in the attached Action Plan, will help ensure effective restoration and protection of the functions and values of our Nation=s wetlands, consistent with the goals of our clean water laws. The themes guiding these actions include:

- working in consultation with the Tribes, States, and interested parties to provide a consistent voice on compensatory mitigation matters;
- focusing our guidance, research, and resources to advance ecologically meaningful compensatory mitigation, informed by science;
- emphasizing accountability, monitoring, and follow-through in evaluating compensatory mitigation;
- applying the same compensatory mitigation provisions to Federal projects and on Federal lands as we do to private parties, consistent with existing laws and policies;
- providing information and options to those who need to mitigate for losses of wetlands functions; and
- providing technical and research assistance to those who undertake the work of mitigation.

An interagency team will guide the development and implementation of the following action items. Recognizing that advances in science and technology will continue to improve our ability to protect and restore the Nation=s aquatic resources, some of the following action items may be modified by the team consistent with our evolving understanding of effective wetlands management.

Clarifying Recent Mitigation Guidance

- The Army Corps of Engineers (Corps), in consultation with the Environmental Protection Agency (EPA), the Department of Agriculture (USDA), the Department of the Interior (DOI), the Federal Highway Administration (FHWA), and the National Oceanic Atmospheric Administration (NOAA), has re-evaluated its mitigation Regulatory Guidance Letter and is reissuing it to improve mitigation implementation provisions.

Integrating Compensatory Mitigation into a Watershed Context

- The Corps and EPA, in conjunction with USDA, DOI, and NOAA, working with States and Tribes, will co-lead the development of guidance on the use of on-site vs. off-site and in-kind vs. out-of-kind compensatory mitigation by the end of 2003.

- EPA and the Corps, in conjunction with USDA, DOI, and NOAA, working with States and Tribes, will co-lead the development of guidance on the use of vegetated buffers as a potential component of compensatory mitigation by 2004.

- The Corps and EPA, in conjunction with USDA, DOI, and NOAA, working with States and Tribes, will develop guidance on the appropriate use of preservation for compensatory mitigation by 2004.

- Building on the guidance above, EPA and the Corps, working with USDA, DOI, and NOAA, will co-lead an analysis with Tribes and States on the use of compensatory mitigation within a watershed context and identify criteria for making compensatory mitigation decisions in this context by 2005.

Improving Compensatory Mitigation Accountability

- EPA, the Corps, and the FHWA will develop guidance that clarifies implementation of the TEA-21 preference for mitigation banking in 2003.

- EPA will continue to provide financial assistance through its wetlands State grants program to encourage Tribes, States, and others to increase the success of mitigation in their jurisdictions.

- EPA and the Corps, in conjunction with USDA, DOI, and NOAA, will develop guidance by 2004 for protecting those wetlands for which mitigation, restoration, or creation is not feasible or scientifically viable.

- EPA and the Corps, in conjunction with USDA, DOI, and NOAA, will clarify considerations for mitigating impacts to streams in the Section 404 program in 2003.

Clarifying Performance Standards

- The Corps, EPA, USDA, DOI, and NOAA, working with States and Tribes, will develop a model mitigation plan checklist for permit applicants in 2003.

- EPA and the Corps, in conjunction with USDA, DOI, and NOAA, will review and develop guidance adapting the National Academies of Sciences' National Research Council-recommended guidelines for creating or restoring self-sustaining wetlands to the Section 404 program in 2003.

- EPA will analyze existing research to determine the effectiveness of using biological indicators and functional assessments for evaluating mitigation performance in 2003.

- Building upon the biological indicators and functional assessments research, EPA, in conjunction with the Corps, USDA, DOI, and NOAA, and working with States and Tribes, will lead the development of performance standards guidance on monitoring and adaptive management of mitigation sites by 2005.

- EPA and the Corps, in conjunction with USDA, DOI, and NOAA, will clarify key concepts related to performance standards.

Improving Data Collection and Availability

- The Corps, EPA, USDA, DOI, and NOAA, in conjunction with States and Tribes, will compile and disseminate information regarding existing mitigation-tracking database systems in 2003.

- Building upon the analysis of existing mitigation data base systems, the Corps, EPA, USDA, DOI, and NOAA will establish a shared mitigation data base by 2005.

- Utilizing the shared data base, the Corps, in conjunction with EPA, USDA, DOI, and NOAA, will provide an annual public report card on compensatory mitigation to complement reporting of other wetlands programs by 2005.

The signatories or their designated representatives shall meet annually to review the progress being made regarding the implementation of the Action Plan. EPA and the Corps may invite other relevant federal agencies to participate in one or more of the action items.

This plan may be modified as necessary, by mutual written agreement of all the parties.

The participating agencies intend to fully carry out the terms of this agreement. All provisions in this agreement, however, are subject to available resources and authorities of the respective agencies under Section 404 of the Clean Water Act.

/Signed/ 12/24/02
Les Brownlee
Acting Assistant Secretary for Civil Works
Department of the Army (Civil Works)

/Signed/ 12/24/02
G. Tracy Mehan, III
Assistant Administrator for Water
U.S. Environmental Protection Agency

/Signed—Scott B.Gudes/ 12/24/02
/for/ Vice Admiral Conrad C. Lautenbacher, Jr.
U.S. Navy (ret.)
Undersecretary of Commerce for Oceans and Atmosphere
U.S. Department of Commerce

/Signed/ 12/24/02
Lynn Scarlett
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/Signed/ 12/24/02
Mark E. Rey
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U.S. Department of Agriculture

*/Signed—George E. Schoener/*12/24/02
/for/ Emil H. Frankel
Assistant Secretary for Transportation Policy
U.S. Department of Transportation

ACTION PLAN

Introduction

Several recent independent analyses and public commentaries have provided a critical evaluation of the effectiveness of compensatory mitigation for authorized losses of wetlands and other waters of the United States under Section 404 of the Clean Water Act. These analyses and commentaries highlighted a number of shortfalls and identified a variety of technical, programmatic, and policy recommendations for the Federal agencies, States, and other involved parties.

In particular, the agencies are mindful of the comprehensive evaluation of wetlands compensatory mitigation completed by the National Academies of Sciences' National Research Council (NAS) last year. This report, in addition to the General Accounting Office (GAO) report on in-lieu-fee mitigation and others recently completed, provided the basis for a broad, independently facilitated stakeholder gathering in October 2001, during which the agencies gathered feedback from those with an interest in the future of compensatory mitigation, including representatives from academia, States, mitigation bankers, in-lieu-fee mitigation providers, environmental organizations, home builders, and industry. We recognize that success in our ultimate goal is dependent on effective interactions with these stakeholders as we proceed.

Background

The Bush Administration affirms its commitment to the goal of no net loss of the Nation=s wetlands. The Administration is hopeful of achieving that goal and in the near future to begin increasing the overall functions and values of our wetlands through the combined efforts of the numerous governmental programs and initiatives, including the Clean Water Act, and non-regulatory wetland conservation initiatives and partnerships among Federal agencies, state, tribal and local governments, and the private and not-for-profit sectors. A fundamental objective of the Clean Water Act Section 404 program is that authorized losses of wetlands and other waters are offset by restored, enhanced, or created wetlands and other waters that replace those lost acres and functions and values. Importantly, the regulatory program provides first that all appropriate and practicable steps be taken to avoid impacts to wetlands and other waters, and then that remaining impacts be minimized, before determining necessary compensatory mitigation to offset remaining impacts. This mitigation sequence parallels that which is embodied in the National Environmental Policy Act governing the review of other Federal actions as well. Compliance with these mitigation sequencing requirements is an essential environmental safeguard to ensure that Clean Water Act objectives for the protection of the Nation=s remaining wetlands are achieved.

Federal guidance on compensatory mitigation has been provided in several interagency documents, including the 1990 Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines (MOA). In 1995, EPA and the Department of the Army were joined by the Departments of the Interior, Commerce, and Agriculture in developing the Federal Guidance on the Establishment, Use and Operation of Mitigation Banks (Banking Guidance). In 2000, the multi-agency Federal Guidance on the Use of In-Lieu-Fee Arrangements for Compensatory Mitigation under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act (In-Lieu-Fee Guidance) was issued. These interagency efforts have helped clarify compensatory mitigation objectives, endorse entrepreneurial mechanisms to achieve mitigation goals, and guide permit applicants in developing environmentally sound and enforceable mitigation projects. It is in light of this background that the agencies outline the following specific actions to improve wetlands compensatory mitigation under the Clean Water Act and related programs.

Clarifying Recent Mitigation Guidance

The Corps, in consultation with EPA, USDA, DOI, FHWA, and NOAA, has re-evaluated its mitigation Regulatory Guidance Letter and is reissuing it to clarify mitigation implementation provisions. The GAO noted that in some circumstances where mitigation involved third-party providers that were not mitigation bankers or in-lieu-fee providers, permits did not clearly state who was responsible for the success of the compensatory mitigation. Consistent with previous joint guidance and independent recommendations, the Corps will reissue the mitigation Regulatory Guidance Letter to clearly identify the party responsible for the ecological performance and results of the compensatory mitigation, the level of documentation necessary by applicants and mitigation providers, and other relevant implementation issues to ensure that mitigation is properly completed.

Integrating Compensatory Mitigation into a Watershed Context

The Corps and EPA, in conjunction with USDA, DOI, and NOAA, working with States and Tribes, will co-lead the development of guidance on the use of on-site vs. off-site and in-kind vs. out-of-kind compensatory mitigation by the end of 2003. Existing guidance provides that "compensatory actions...should be undertaken, when practicable, in areas adjacent or contiguous to the discharge site (on-site compensatory mitigation)" and that "generally, in-kind compensatory mitigation is preferable to out-of-kind." Existing guidance provides flexibility, however, by allowing the use of off-site mitigation where it is determined to be practicable and environmentally preferable to on-site

mitigation and allows use of out-of-kind mitigation in circumstances where it is environmentally desirable, in the context of consolidated mitigation. To ensure effective and consistent use of off-site and out-of-kind compensatory mitigation, the agencies will clarify, and if necessary, expand upon, existing guidance. This effort will build on existing language developed for the 1990 MOA, Federal Banking Guidance, In-Lieu-Fee Guidance, and Mitigation RGL and provide examples illustrating when it may be appropriate to use off-site and/or out-of-kind mitigation in lieu of on-site and/or in-kind mitigation.

EPA and the Corps, in conjunction with USDA, DOI, and NOAA, working with States and Tribes, will co-lead the development of guidance on the use of vegetated buffers as a potential component of compensatory mitigation by 2004. Lands bordering open waters (e.g., rivers, lakes, estuaries) play important roles including but not limited to maintaining water quality, providing habitat for fish and wildlife, and providing flood storage benefits. To date, limited guidance has been provided to agency field staff on the appropriate use of vegetated buffers as a component of an overall compensatory mitigation plan. To ensure appropriate and consistent use of vegetated buffers, the agencies will provide guidance to clarify the use of vegetated buffers as mitigation in the Section 404 program. This effort will utilize performance goals/standards in recommending vegetated buffers and include examples of methodologies for determining mitigation credit for vegetated buffers. This effort will draw upon buffer information complied for the non-point/agricultural water programs and existing wetlands/forestry best management practices.

The Corps and EPA, in conjunction with USDA, DOI, and NOAA, working with States and Tribes, will develop guidance on the appropriate use of preservation for compensatory mitigation by 2004. Typically, the preservation of existing aquatic resources has been accepted as compensatory mitigation only in exceptional circumstances. To ensure the appropriate and consistent use of preservation as compensatory mitigation, the agencies will develop specific guidance that will clarify the exceptional circumstances described in current guidance in which preservation may serve as an effective and environmentally appropriate approach to satisfy compensatory mitigation requirements. This effort will build on existing language developed for the 1990 MOA and Federal Banking Guidance and provide examples of acceptable preservation projects.

Building on the guidance above, EPA and the Corps, working with USDA, DOI, and NOAA, will co-lead an analysis with Tribes and States on the use of compensatory mitigation within a watershed context and identify criteria for making compensatory mitigation decisions in this context by 2005. As a general matter, compensatory mitigation decisions are made on a case-by-case

basis and often do not consider the proper placement of mitigation projects within the landscape context, the ecological needs of the watershed, and the cumulative effects of past impacts. The Federal agencies will analyze the issues associated with better use of compensatory mitigation within a watershed context, with assistance from the States and agencies. Following this analysis, the agencies will develop guidance to encourage placement of mitigation where it would have the greatest benefit and probability for long-term sustainability. The guidance will help decision-makers utilize the watershed-based planning tools/resources already developed by the agencies as well as state (Basinwide Management Approach), regional (Synoptic Assessment, Southeastern Ecological Framework), and local (watershed plans, land suitability models) watershed planning efforts. This guidance will complement other non-regulatory watershed management initiatives and partnerships.

Improving Compensatory Mitigation Accountability

EPA, the Corps, and the FHWA will develop guidance that clarifies implementation of the TEA-21 preference for mitigation banking in 2003. The statutory preference for mitigation banking in offsetting impacts to aquatic resources and natural habitats from federally-funded highway projects has caused some confusion in circumstances where onsite mitigation opportunities are available. The agencies will clarify how the mitigation banking preference may be used to most effectively mitigate for such projects with linear and scattered impacts to wetlands.

EPA will continue to provide financial assistance through its wetlands State grants program to encourage Tribes, States, and others to increase the success of mitigation in their jurisdictions. EPA has identified improving wetlands ecological performance and results of compensatory mitigation as a priority, along with wetlands monitoring and assessment and the protection of vulnerable wetlands and aquatic resources. The Wetland Program Development Grants, administered by EPA, provide recipients an opportunity to conduct projects that promote coordination and accelerate research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution. Priority is given to proposals that address EPA=s priority areas, including improving the effectiveness of compensatory mitigation. EPA will announce a set of Wetland Program Development Grants for projects that support the improvement of mitigation success in achieving wetlands performance and results, in the context of building or enhancing wetlands protection, restoration, or management programs, and will publicize the annual availability of grants for this purpose.

EPA and the Corps, in conjunction with USDA, DOI, and NOAA, will develop guidance by 2004 for protecting those wetlands for which mitigation, restoration, or creation is not feasible or scientifically viable. As concluded by the NAS, there are a number of aquatic resource systems for which successful re-creation or restoration has not been effectively demonstrated and therefore avoidance of impacts to these resources was strongly recommended. Certain aquatic resource types require a specific combination of plant types, soil characteristics, and water supply that are currently difficult to create. To ensure that we meet our Clean Water Act goals, the agencies will provide guidance emphasizing the protection of the Nation=s wetlands resources that are difficult to restore.

EPA and the Corps, in conjunction with USDA, DOI, and NOAA, will clarify considerations for mitigating impacts to streams in the Section 404 program in 2003. Historically, impacts to stream systems such as filling, impoundment, and channelization, have been compensated with wetland mitigation. To date, limited guidance has been provided to agency field staff in the appropriate considerations for mitigating impacts to streams. To ensure appropriate and consistent mitigation for impacts to streams, the agencies, working with States, will clarify considerations for mitigating impacts to streams in the Section 404 program. Many agency field offices are independently developing a variety of stream assessment approaches and stream standard operating procedures (e.g., NC, SC, GA, TN, KY, MS, and AL). Also, a number of stream and stream/wetland mitigation banks have been established or are currently under review by agency field offices. These and other ongoing stream restoration training efforts will help inform development of the guidance.

Clarifying Performance Standards

The Corps, EPA, USDA, DOI, and NOAA, working with States and Tribes, will develop a model mitigation plan checklist for permit applicants in 2003. The type of information needed for mitigating impacts to wetlands and other waters is often unclear to permit applicants. Taking advantage of State and Corps District examples, this effort would result in a model compensatory mitigation checklist to facilitate permit applicants providing necessary information early in the permitting process. The checklist would also allow more effective participation during public notice and help minimize delays in the permit decision making process. The checklist could be regionally adapted to respond to specific needs of different areas of the country. A number of mitigation checklists are currently in use by various Districts, States, and Mitigation Bank Review Teams and could be readily consulted.

EPA and the Corps, in conjunction with USDA, DOI, and NOAA, will review and develop guidance adapting the NAS-recommended guidelines for creating or restoring self-sustaining wetlands to the Section 404 program in 2003. The NAS proposed ten operational guidelines that would aid agency personnel and mitigation practitioners in designing projects to become ecologically self-sustaining. As stated by the NAS, to become self-sustaining, aquatic resource mitigation sites must have the proper hydrological processes present and be able to persist over time. The agencies will adapt the NAS guidelines for use in the Section 404 program. The NAS-recommended guidelines could be adapted into a series of questions (e.g., checklist) that could be made available to permit applicants and answered by regulatory staff in consultation with other resource agencies during project review.

EPA will analyze existing research to determine the effectiveness of using biological indicators and functional assessments for evaluating mitigation performance in 2003. Independent evaluations of mitigation raised concerns that there was an over-reliance on the use of vegetation to measure wetlands mitigation success. Biological assessments (bio-assessments) are based on the premise that the community of plants and animals living in a wetland will reflect the health of a wetland. Typically, bio-assessments evaluate wetland health and could be used in conjunction with functional assessments, which are primarily designed to inform management decisions regarding proposed impacts to wetlands and restoration of wetlands to compensate for wetland losses. EPA will lead an effort to review potential biological indicators, functional assessments, and other reference site parameters for assessing compensatory mitigation. Literature reviewed by NAS in the completion of its report and work done by the Corps and EPA to develop several assessment methodologies will serve as a starting point.

Building upon the biological indicators and functional assessments research, EPA, in conjunction with the Corps, USDA, DOI, and NOAA, and working with States and Tribes, will lead the development of performance standards guidance on monitoring and adaptive management of mitigation sites by 2005. Current guidance does not provide sufficient consistency regarding how to evaluate achievement of wetlands ecological performance and results, nor does current guidance establish appropriate monitoring and adaptive management activities. The GAO recommended that the agencies establish criteria for evaluating performance of mitigation projects and develop and implement procedures for assessing achievement of wetlands ecological performance and results. The NAS concluded that more effective monitoring, as part of adaptive management, as well as compliance evaluations, would increase the performance of compensatory mitigation sites and allow for adaptive management. EPA will lead the effort to build upon the guidelines for maintaining

self-sustaining wetlands, draw upon published approaches to performance standards, and use the results of the biological/functional assessments analysis.

EPA and the Corps, in conjunction with USDA, DOI, and NOAA, will clarify key concepts related to performance standards.

Improving Data Collection and Availability

The Corps, EPA, USDA, DOI, and NOAA, in conjunction with States and Tribes, will compile and disseminate information regarding existing mitigation-tracking data base systems in 2003. The independent evaluations of mitigation highlighted a need for improved data to track mitigation. While a system currently exists to track acreages of permitted impacts and compensatory mitigation required, the lack of wetlands function information and other parameters hampers efforts to accurately measure achievement of wetlands performance goals and results. The Corps and the other Federal agencies will compile and evaluate the merits of the various mitigation-tracking data base systems in use, including the Corps= RAMS/RAMS2 data base as well as regional data bases established by agency field offices.

Building upon the analysis of existing mitigation data base systems, the Corps, EPA, USDA, DOI, and NOAA will establish a shared mitigation data base by 2005. Based on the results of the analysis, the agencies will establish a data base that can be shared with federal and state regulatory and resource agencies and the public. An interagency team is currently working on a pilot internet-based tool to assist in tracking large-scale mitigation projects such as mitigation banks. This tool is being designed to manage and monitor information regarding mitigation bank credit/debit transactions, attainment of performance standards, credit release, and bank documents. The system is being designed to reside on a District=s server and allow different levels of access/input for the public, bank sponsors, Corps staff, and other Mitigation Bank Review Team members.

Utilizing the shared data base, the Corps, in conjunction with EPA, USDA, DOI, and NOAA, will provide an annual public report card on compensatory mitigation to complement reporting of other wetlands programs by 2005. The NAS reported that @the goal of no net loss of wetlands is not being met for wetland functions by the mitigation program.@ To ensure that the public is informed about the status of the Administration=s commitment to the no net loss of wetlands goal, the Corps would lead the development of an annual public report card on the contributions of the Section 404 program to the no net loss of wetlands goal, to complement

reporting of other wetlands programs. Shared databases would allow relatively easy queries regarding credit/debit transactions and the status of restoration/enhancement for mitigation projects and sites.